



Fauna of India Checklist

A CHECKLIST OF INDIAN BAT SPECIES (Mammalia : Chiroptera)

S. S. Talmale and Uttam Saikia

(Updated: May 2018)



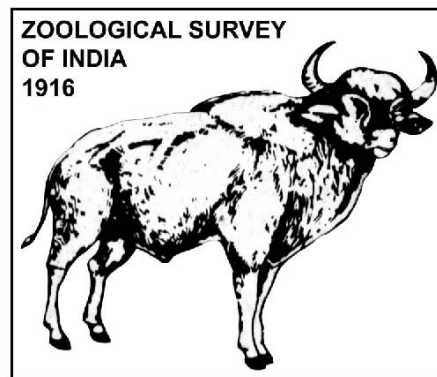
Murina pluvialis Ruedi et al 2012

Zoological Survey of India

Prani Vigyan Bhawan, M-Block, New Alipore, Kolkata- 700 053

Citation: Talmale, S.S. and Saikia, U. (2018) A Checklist of Indian Bat Species (Mammalia : Chiroptera). Version 2.0. Online publication is available at www.zsi.gov.in (Last update: May 2018)

Cover Photo: Rainforest Tube-nosed Bat, *Murina pluvialis* Ruedi *et al.* 2012, from Meghalaya (Photograph by Uttam Saikia)



Zoological Survey of India
Prani Vigyan Bhawan
M-Block, New Alipore
Kolkata-700053

Contents

Introduction	01
List of Families	03
List of Genera	03
List of Species	03
Notes and Comments	10
Acknowledgements	13
References	13

A Checklist of Indian Bat Species (Mammalia : Chiroptera)

S. S. Talmale¹ and Uttam Saikia^{2*}

¹Western Regional Centre, Zoological Survey of India, Sector 29, Rawet Road, Akurdi, P.C.N.T. Post, Pune-411 044, Maharashtra, India. *E-mail* : *s_talmale@yahoo.co.in*

²North Eastern Regional Centre, Zoological Survey of India, Risa colony, Shillong-793 003, Meghalaya, India. *E-mail* : *uttamzsi@gmail.com*

***Corresponding author**

(Last update: May 2018)

INTRODUCTION

Chiropterans commonly known as bats are the only true flying mammals, comprising altogether 1116 species in 202 genera under 18 families globally, and they constitute about a quarter of the entire mammal species (Wilson & Reeder 2011). Among mammals, bats are unique structurally and functionally as their forelimbs are modified into membranous wings (patagium), supported by long digits which is the flying apparatus for them. An interfemoral membrane called uropatagium is also present between the hind limbs. The Volant mode of life in bats is supported by numerous other structural and functional modifications. The order Chiroptera has been classically subdivided into two extant suborders, Megachiroptera (Old World Fruit Bats) and Microchiroptera (laryngeally echolocating bats). However, with the application of molecular and phylogenetic methodologies, scientists have suggested a new subordinal division of Chiroptera, namely **Yinpterochiroptera** comprising megabat family Pteropodidae along with microbat families Rhinolophidae, Rhinopomatidae and Megadermatidae and **Yangochiroptera** including rest of the microbat families (Springer *et al.* 2001; Teeling *et al.* 2002).

In their exhaustive account "Checklist of Palaearctic and Indian mammals", Ellerman and Morrison-Scott 1951, 1966 (2nd edition) enlisted mammal species (Including Chiroptera) reported till 1946 from India and included 85 species of bats within the political boundary of the country. This work in fact was a compilation of the earlier works of zoologists like E. Blyth, B. H. Hodgson, T. C. Jerdon, G. E. Dobson, T. Hutton, W. T. Blanford, R. C. Wroughton, G. S. Miller, K. V. Ryley, M. Davidson, J. P. Mills, M. A. C. Hinton, T. B. Fry, H. M. Lindsay, O. Thomas, W. Elliot, T. Hardwicke, T. Horsfield,

A Checklist of Indian Bat Species (Mammalia : Chiroptera)

J. Anderson, G. M. Allen, K. Andersen etc. with up-dated information on the taxonomy and geographical distribution of Indian bats.

In the post independence period, substantial contribution to the field of Indian bat taxonomy and their geographical distribution has been made by various scientist of Zoological Survey of India and various other organizations. Some of the significant revisionary work on Indian Bat taxonomy and geographical distribution include Brosset (1962abc, 1963); Topal (1974); Corbet and Hill (1992); Kock and Bhat (1994); Bates and Harrison (1997); Sinha (1970, 1973, 1999); Pradhan and Kulkarni (1997); Pradhan (2008); Ramarkishna *et al.* (2003); Csorba *et al.* (2003); Das (2003); Ghosh (2005, 2008); Alfred *et al.* (2006); Srinivasulu and Srinivasulu (2001, 2006); Saikia *et al.* (2011); Saikia *et al.* (2017) etc. Recently Nameer (2008) revised and updated the checklist of Indian mammals at species level. Our earlier bat checklist (November, 2009) listed 117 species reported from India. This revised and updated checklist reports the valid Indian chiropteran taxa upto subspecies level based on Simmons (2005) and other recent published work and includes 127 species and 94 subspecies under 41 genera belonging to 9 families (Table-1).

Table-1: Global and Indian diversity of Chiroptera

Sl. No.	Family	No. Genera		No. Speices	
		World	India	World	India
1	Pteropodidae	42	8	190	14
2	Rhinolophidae	1	1	80	18
3	Hipposideridae	9	3	85	16
4	Megadermatidae	4	1	5	2
5	Rhinopomatidae	1	1	4	2
6	Craseonycteridae#	1	0	1	0
7	Emballonuridae	13	2	51	6
8	Nycteridae#	1	0	16	0
9	Myzopodidae#	1	0	1	0
10	Mystacinidae#	1	0	2	0
11	Phyllostomidae#	55	0	180	0
12	Mormoopidae#	2	0	10	0
13	Noctilionidae#	1	0	2	0
14	Furipteridae#	2	0	2	0
15	Thyropteridae#	1	0	4	0
16	Natalidae#	3	0	9	0
17	Molossidae	16	3	104	4
18	Vespertilionidae	48 ^s	21	425 ^s	62
19	Miniopteridae	-	1	-	3
Total		202	41	1116	127

Note : Families with '#' are not represented in India.

World Chiroptera data after Wilson and Reeder 2011

^s includes species from the family Miniopteridae

List of Families:

- | | | |
|-------------------|-------------------|---------------------|
| 1. Pteropodidae | 4. Megadermatidae | 7. Molossidae |
| 2. Rhinolophidae | 5. Rhinopomatidae | 8. Vespertilionidae |
| 3. Hipposideridae | 6. Emballonuridae | 9. Miniopteridae |

List of Genera:

- | | | |
|-------------------------|--------------------------|---------------------------|
| 1. <i>Cynopterus</i> | 15. <i>Saccolaimus</i> | 29. <i>Barbastella</i> |
| 2. <i>Eonycteris</i> | 16. <i>Taphozous</i> | 30. <i>Otonycteris</i> |
| 3. <i>Latidens</i> | 17. <i>Chaerephon</i> | 31. <i>Plecotus</i> |
| 4. <i>Macroglossus</i> | 18. <i>Otomops</i> | 32. <i>Falsistrellus</i> |
| 5. <i>Megaerops</i> | 19. <i>Tadarida</i> | 33. <i>Hypsugo</i> |
| 6. <i>Pteropus</i> | 20. <i>Arielulus</i> | 34. <i>Ia</i> |
| 7. <i>Rousettus</i> | 21. <i>Eptesicus</i> | 35. <i>Tylonycteris</i> |
| 8. <i>Sphaerias</i> | 22. <i>Hesperoptenus</i> | 36. <i>Myotis</i> |
| 9. <i>Rhinolophus</i> | 23. <i>Scotoecus</i> | 37. <i>Harpiocephalus</i> |
| 10. <i>Aselia</i> | 24. <i>Scotomanes</i> | 38. <i>Murina</i> |
| 11. <i>Coelops</i> | 25. <i>Scotophilus</i> | 39. <i>Harpiola</i> |
| 12. <i>Hipposideros</i> | 26. <i>Nyctalus</i> | 40. <i>Kerivoula</i> |
| 13. <i>Megaderma</i> | 27. <i>Pipistrellus</i> | 41. <i>Miniopterus</i> |
| 14. <i>Rhinopoma</i> | 28. <i>Scotozous</i> | |

Species Checklist

Note : Kindly see the Notes for the species marked with ‘*’ at the end of the checklist.

Order Chiroptera Blumenbach, 1779

Suborder Megachiroptera Dobson, 1875

Family Pteropodidae Gray, 1821

1. Genus :Cynopterus F. Cuvier, 1824

1. *Cynopterus brachyotis* (Müller, 1838). Lesser Short-nosed Fruit Bat
 - *1a. *Cynopterus brachyotis brachyotis* (Müller, 1838)
 - *1b. *Cynopterus brachyotis brachysoma* Dobson, 1871
 - 1c. *Cynopterus brachyotis ceylonensis* Gray, 1871
2. *Cynopterus sphinx* (Vahl, 1797). Greater Short-nosed Fruit Bat
 - 2a. *Cynopterus sphinx sphinx* (Vahl, 1797)
 - *2b. *Cynopterus sphinx scherzeri* Zelebor, 1869

2. Genus : Eonycteris Dobson, 1873

3. *Eonycteris spelaea* (Dobson, 1871). Lesser Dawn Bat
 - 3a. *Eonycteris spelaea spelaea* (Dobson, 1871)

3. Genus :Latidens Thonglongya, 1972

4. *Latidens salimalii* Thonglongya, 1972. Salim Ali’s Fruit Bat

4. Genus :Macroglossus F. Cuvier, 1824

5. *Macroglossus sobrinus* K. Andersen, 1911. Greater Long-nosed Fruit Bat

5a. *Macroglossus sobrinus sobrinus* K. Andersen, 1911

5. Genus :Megaerops Peters, 1865

*6. *Megaerops niphanae* Yenbutra and Felten, 1983. Ratanaworabhan's Fruit Bat

6. Genus :Pteropus Brisson, 1762

7. *Pteropus faunulus* Miller, 1902. Nicobar Flying Fox

8. *Pteropus giganteus* (Brünnich, 1782). Indian Flying Fox

8a. *Pteropus giganteus giganteus* (Brünnich, 1782).

*8b. *Pteropus giganteus leucocephalus* Hodgson, 1835

9. *Pteropus hypomelanus* Temminck, 1853. Variable Flying Fox

*9a. *Pteropus hypomelanus geminorum* Miller, 1903

9b. *Pteropus hypomelanus satyrus* K. Andersen, 1908

10. *Pteropus melanotus* Blyth, 1863. Black-eared Flying Fox

10a. *Pteropus melanotus melanotus* Blyth, 1863.

10b. *Pteropus melanotus tytleri* Dobson, 1874.

*11. *Pteropus vampyrus* Linnaeus, 1758 Large Flying Fox

7. Genus :Rousettus Gray, 1821

*12. *Rousettus aegyptiacus* (E. Geoffroy, 1810). Egyptian Rousette

12a. *Rousettus aegyptiacus arabicus* Anderson and de Winton, 1902

13. *Rousettus leschenaultii* (Desmarest, 1820). Leschenault's Rousette

13a. *Rousettus leschenaultii leschenaultii* (Desmarest, 1820)

8. Genus :Sphaerias Miller, 1906

14. *Sphaerias blanfordi* (Thomas, 1891). Blanford's Fruit Bat

Suborder Microchiroptera Dobson, 1875

Family Rhinolophidae Gray, 1825

9. Genus :Rhinolophus Lacépède, 1799

15. *Rhinolophus affinis* Horsfield, 1823. Intermediate Horseshoe Bat

15a. *Rhinolophus affinis andamanensis* Dobson, 1872

15b. *Rhinolophus affinis himalayanus* K. Andersen, 1905

16. *Rhinolophus beddomei* K. Andersen, 1905. Bedomme's Horseshoe Bat

16a. *Rhinolophus beddomei beddomei* K. Andersen, 1905

17. *Rhinolophus cognatus* K. Andersen, 1906. Andaman Horseshoe Bat

17a. *Rhinolophus cognatus cognatus* K. Andersen, 1906

17b. *Rhinolophus cognatus famulus* K. Andersen, 1918

*18. *Rhinolophus ferrumequinum* (Schreber, 1774). Greater Horseshoe Bat

18a. *Rhinolophus ferrumequinum proximus* K. Andersen, 1905

18b. *Rhinolophus ferrumequinum tragatus* Hodgson, 1835

19. *Rhinolophus hipposideros* (Bechstein, 1800). Lesser Horseshoe Bat

19a. *Rhinolophus hipposideros midas* K. Andersen, 1905

20. *Rhinolophus lepidus* Blyth, 1844. Blyth's Horseshoe Bat

20a. *Rhinolophus lepidus lepidus* Blyth, 1844

20b. *Rhinolophus lepidus monticola* K. Andersen, 1905

21. *Rhinolophus luctus* Temminck, 1834. Woolly Horseshoe Bat

21a. *Rhinolophus luctus perniger* Hodgson, 1843

22. *Rhinolophus macrotis* Blyth, 1844. Big-eared Horseshoe Bat

22a. *Rhinolophus macrotis macrotis* Blyth, 1844

- 23. *Rhinolophus mitratus* Blyth, 1844. Mitred Horseshoe Bat
- 24. *Rhinolophus pearsonii* Horsfield, 1851. Pearson's Horseshoe Bat
 - 24a. *Rhinolophus pearsonii pearsonii* Horsfield, 1851
- 25. *Rhinolophus pusillus* Temminck, 1834. Least Horseshoe Bat
 - 25a. *Rhinolophus pusillus blythi* K. Andersen, 1918
 - 25b. *Rhinolophus pusillus gracilis* K. Andersen, 1905
- 26. *Rhinolophus rouxii* Temminck, 1835. Rufous Horseshoe Bat
 - 26a. *Rhinolophus rouxii rouxii* Temminck, 1835
- 27. *Rhinolophus shortridgei* K. Andersen, 1918. Shortridge's Horseshoe Bat
- 28. *Rhinolophus sinicus* K. Andersen, 1905. Chinese Rufous Horseshoe Bat
 - 28a. *Rhinolophus sinicus sinicus* K. Andersen, 1905
- 29. *Rhinolophus subbadius* Blyth, 1844. Little Nepalese Horseshoe Bat
- 30. *Rhinolophus trifoliatum* Temminck, 1834. Trefoil Horseshoe Bat
 - 30a. *Rhinolophus trifoliatum trifoliatum* Temminck, 1834
- *31. *Rhinolophus siamensis* (Gyldenstille, 1917). Thai Horseshoe Bat
- 32. *Rhinolophus yunnanensis* Dobson, 1872. Dobson's Horseshoe Bat

Family Hipposideridae Lydekker, 1891

10. Genus :*Aselia* Gray, 1838

- *33. *Asellia tridens* (E. Geoffroy, 1813). Trident Leaf-nosed Bat

11. Genus :*Coelops* Blyth, 1848

- 34. *Coelops frithii* Blyth, 1848. East Asian Tailless Leaf-nosed Bat
 - 34a. *Coelops frithii frithii* Blyth, 1848

12. Genus :*Hipposideros* Gray, 1831

- 35. *Hipposideros armiger* (Hodgson, 1835). Great Leaf-nosed Bat
 - 35a. *Hipposideros armiger armiger* (Hodgson, 1835)
- 36. *Hipposideros ater* Templeton, 1848. Dusky Leaf-nosed Bat
 - 36a. *Hipposideros ater ater* Templeton, 1848
 - 36b. *Hipposideros ater nallamalaensis* Srinivasulu and Srinivasulu, 2006
- 37. *Hipposideros cineraceus* Blyth, 1853. Ashy Leaf-nosed Bat
 - 37a. *Hipposideros cineraceus cineraceus* Blyth, 1853
- *38. *Hipposideros diadema* (E. Geoffroy, 1813). Diadem Leaf-nosed Bat
 - 38a. *Hipposideros diadema nicobarensis* Dobson, 1871
- 39. *Hipposideros durgadasi* Khajuria, 1970. Durga Das's Leaf-nosed Bat
- 40. *Hipposideros fulvus* Gray, 1838. Fulvus Leaf-nosed Bat
 - 40a. *Hipposideros fulvus fulvus* Gray, 1838
 - 40b. *Hipposideros fulvus pallidus* K. Andersen, 1918
- 41. *Hipposideros galeritus* Cantor, 1846. Cantor's Leaf-nosed Bat
 - 41a. *Hipposideros galeritus brachyotis* Dobson, 1874
- 42. *Hipposideros hypophyllus* Kock and Bhat, 1994. Leafletted Leaf-nosed Bat
- *43. *Hipposideros khasiana* Thabrah *et al.*, 2006
- 44. *Hipposideros lankadiva* Kelaart, 1850. Indian Leaf-nosed Bat
 - 44a. *Hipposideros lankadiva indus* Andersen, 1918
- 45. *Hipposideros larvatus* (Horsfield, 1823). Intermediate Leaf-nosed Bat
 - 45a. *Hipposideros larvatus leptophyllus* Dobson, 1874
- *46. *Hipposideros nicobarulae* Miller, 1902. Nicobar Leaf-nosed Bat

47. *Hipposideros pomona* K. Andersen, 1918. Pomona Leaf-nosed Bat
47a. *Hipposideros pomona pomona* K. Andersen, 1918
47b. *Hipposideros pomona gentilis* K. Andersen, 1918
*48. *Hipposideros speoris* (Schneider, 1800). Schneider's Leaf-nosed Bat

Family Megadermatidae H. Allen, 1864

13. Genus :*Megaderma* E. Geoffroy, 1810

49. *Megaderma lyra* E. Geoffroy, 1810. Greater False Vampire Bat
49a. *Megaderma lyra lyra* E. Geoffroy, 1810
50. *Megaderma spasma* (Linnaeus, 1758). Lesser False Vampire Bat
50a. *Megaderma spasma horsfieldii* Blyth, 1863
*50b. *Megaderma spasma majus* Andersen, 1918

Family Rhinopomatidae Bonaparte, 1838

14. Genus :*Rhinopoma* E. Geoffroy, 1818

51. *Rhinopoma hardwickii* Gray, 1831. Lesser Mouse-tailed Bat
51a. *Rhinopoma hardwickii hardwickii* Gray, 1831
52. *Rhinopoma microphyllum* (Brünnich, 1782). Greater Mouse-tailed Bat
52a. *Rhinopoma microphyllum kinneari* Wroughton, 1912

Family Emballonuridae Gervais, 1855

Subfamily Taphozoinae Jerdon, 1867

15. Genus :*Saccolaimus* Temminck, 1838

53. *Saccolaimus saccolaimus* (Temminck, 1838). Naked-rumped Pouched Bat
53a. *Saccolaimus saccolaimus crassus* Blyth, 1844

16. Genus :*Taphozous* E. Geoffroy, 1818

54. *Taphozous longimanus* Hardwicke, 1825. Long-winged Tomb Bat
54a. *Taphozous longimanus longimanus* Hardwicke, 1825
55. *Taphozous melanopogon* Temminck, 1841. Black-bearded Tomb Bat
55a. *Taphozous melanopogon melanopogon* Temminck, 1841
56. *Taphozous nudiventris* Cretzschmar, 1830. Naked-rumped Tomb Bat
56a. *Taphozous nudiventris kachhensis* Dobson, 1872
57. *Taphozous perforatus* E. Geoffroy, 1818. Egyptian Tomb Bat
57a. *Taphozous perforatus perforatus* E. Geoffroy, 1818
58. *Taphozous theobaldi* Dobson, 1872. Theobald's Tomb Bat
58a. *Taphozous theobaldi secatus* Thomas, 1915

Family Molossidae Gervais, 1856

Subfamily Molossinae Gervais, 1856.

17. Genus :*Chaerephon* Dobson, 1874

59. *Chaerephon plicatus* (Buchanan, 1800). Wrinkle-lipped Free-tailed Bat
59a. *Chaerephon plicatus plicatus* (Buchanan, 1800)

18. Genus :*Otomops* Thomas, 1913

60. *Otomops wroughtoni* (Thomas, 1913). Wroughton's Giant Mastiff Bat

19. Genus :*Tadarida* Rafinesque, 1814

- *61. *Tadarida aegyptiaca* (E. Geoffroy, 1818). Egyptian Free-tailed Bat

61a. *Tadarida aegyptiaca thomasi* Wroughton, 1919

61b. *Tadarida aegyptiaca tragatus* (Dobson, 1874)

*62. *Tadarida teniotis* (Rafinesque, 1814). European Free-tailed Bat

62a. *Tadarida teniotis teniotis* (Rafinesque, 1814)

Family Vespertilionidae Gray, 1821

Subfamily Vespertilioninae Gray, 1821

Tribe Eptesicini Volleth and Heller, 1994

20. Genus :*Arielulus* Hill and Harrison, 1987

63. *Arielulus circumdatus* (Temminck, 1840) Bronze Sprite

21. Genus :*Eptesicus* Rafinesque, 1820

*64. *Eptesicus bottae* (Peters, 1869) Botta's Serotine

65. *Eptesicus gobiensis* Bobrinskii, 1926 Gobi Big Brown Bat

65a. *Eptesicus gobiensis kashgaricus* Bobrinskii, 1926

66. *Eptesicus pachyotis* (Dobson, 1871) Thick-eared Bat

67. *Eptesicus serotinus* (Schreber, 1774) Common Serotine

67a. *Eptesicus serotinus pachyomus* (Tomes, 1857)

68. *Eptesicus tatei* Ellerman and Morrison-Scott, 1951 Sombre Bat

22. Genus :*Hesperoptenus* Peters, 1868

69. *Hesperoptenus tickelli* (Blyth, 1851) Tickell's Bat

Tribe Nycticeiini Gervais, 1855

23. Genus :*Scotoecus* Thomas, 1901

70. *Scotoecus pallidus* (Dobson, 1876) Desert Yellow Lesser House Bat

24. Genus :*Scotomanes* Dobson, 1875

*71. *Scotomanes ornatus* (Blyth, 1851) Harlequin Bat.

71a. *Scotomanes ornatus ornatus* (Blyth, 1851)

71b. *Scotomanes ornatus imbrensis* Thomas, 1921

25. Genus :*Scotophilus* Leach, 1821

72. *Scotophilus heathii* (Horsfield, 1831). Greater Asiatic Yellow House Bat

72a. *Scotophilus heathii heathii* (Horsfield, 1831)

73. *Scotophilus kuhlii* Leach, 1821. Lesser Asiatic Yellow House Bat

73a. *Scotophilus kuhlii kuhlii* Leach, 1821

Tribe Pipistrellini Tate, 1942

26. Genus :*Nyctalus* Bowditch, 1825

74. *Nyctalus leisleri* (Kuhl, 1817). Leisler's Noctule

74a. *Nyctalus leisleri leisleri* (Kuhl, 1817)

75. *Nyctalus montanus* (Barrett-Hamilton, 1906). Mountain Noctule

76. *Nyctalus noctula* (Schreber, 1774). Noctule

76a. *Nyctalus noctula labiata* Hodgson, 1835

27. Genus :*Pipistrellus* Kaup, 1829

77. *Pipistrellus abramus* (Temminck, 1838). Japanese Pipistrelle

78. *Pipistrellus ceylonicus* (Kelaart, 1852). Kelaart's Pipistrelle

78a. *Pipistrellus ceylonicus indicus* Dobson, 1878

79. *Pipistrellus coromandra* (Gray, 1838). Indian Pipistrelle
80. *Pipistrellus javanicus* (Gray, 1838). Javan Pipistrelle
80a. *Pipistrellus javanicus babu* Thomas, 1915
80b. *Pipistrellus javanicus camortae* Miller, 1902
80c. *Pipistrellus javanicus peguensis* Sinha, 1969
81. *Pipistrellus paterculus* Thomas, 1915. Mount Popa Pipistrelle
81a. *Pipistrellus paterculus paterculus* Thomas, 1915
82. *Pipistrellus tenuis* (Temminck, 1840). Least Pipistrelle
82a. *Pipistrellus tenuis mimus* Wroughton, 1899

28. Genus :*Scotozous* Dobson, 1875

83. *Scotozous dormeri* Dobson, 1875. Dormer's Pipistrelle

Tribe Plecotini Gray, 1866

29. Genus :*Barbastella* Gray, 1821

- *84. *Barbastella darjelingensis* (Hodgson, 1855). Large Barbastelle

30. Genus :*Otonycteris* Peters, 1859

85. *Otonycteris hemprichii* Peters, 1859. Hemprich's Desert Bat

31. Genus :*Plecotus* E. Geoffroy Saint-Hilaire, 1818

- *86. *Plecotus homochrous* Hodgson, 1847. Hodgson's Long-eared Bat
*87. *Plecotus wardi* Thomas, 1911. Ward's Long-eared Bat

Tribe Vespertilionini Gray, 1821.

32. Genus :*Falsistrellus* Troughton, 1943

88. *Falsistrellus affinis* (Dobson, 1871). Chocolate Pipistrelle

33. Genus :*Hypsugo* Kolenati, 1856

89. *Hypsugo cadornae* (Thomas, 1916). Cadorna's Pipistrelle
90. *Hypsugo savii* (Bonaparte, 1837). Savi's Pipistrelle
90a. *Hypsugo savii austenianus* Dobson, 1871
90b. *Hypsugo savii caucasicus* (Satunin, 1901)
*91. *Hypsugo joffrei* (Thomas, 1915). Joffre's Pipistrelle

34. Genus :*Ia* Thomas, 1902

92. *Ia io* Thomas, 1902. Great Evening Bat

35. Genus :*Tylonycteris* Peters, 1872

93. *Tylonycteris fulvida* (Blyth, 1859). Lesser Bamboo Bat
*94. *Tylonycteris malayana* Chasen, 1940. Malayan Bamboo Bat
*94a. *Tylonycteris malayana eremtaga* Srinivasulu *et al.*, 2018

Subfamily Myotinae Tate, 1942

36. Genus :*Myotis* Kaup, 1829

- *95. *Myotis altarium* Thomas, 1911. Szechwan Myotis, South-western Mouse-eared Bat
96. *Myotis annectans* (Dobson, 1871). Hairy-faced Myotis
96a. *Myotis annectans annectans* (Dobson, 1871)
97. *Myotis blythii* (Tomes, 1857). Lesser Mouse-eared Myotis
97a. *Myotis blythii blythii* (Tomes, 1857)
98. *Myotis formosus* (Hodgson, 1835). Hodgson's Myotis

- 98a. *Myotis formosus formosus* (Hodgson, 1835)
99. *Myotis hasseltii* (Temminck, 1840). Lesser Large-footed Myotis
99a. *Myotis hasseltii hasseltii* (Temminck, 1840)
100. *Myotis horsfieldii* (Temminck, 1840). Horsfield's Myotis
100a. *Myotis horsfieldii dryas* K. Andersen, 1907
100b. *Myotis horsfieldii peshwa* Thomas, 1915
101. *Myotis laniger* Peters, 1871. Chinese Water Myotis
102. *Myotis longipes* (Dobson, 1873). Kashmir Cave Myotis
103. *Myotis montivagus* (Dobson, 1874). Burmese Whiskered Myotis
104. *Myotis muricola* (Gray, 1846). Nepalese Whiskered Myotis
104a. *Myotis muricola muricola* (Gray, 1846)
104b. *Myotis muricola caliginosus* (Tomes, 1859)
*105. *Myotis nipalensis* (Dobson, 1871) Nepal Myotis, Whiskered Myotis
105a. *Myotis nipalensis nipalensis* (Dobson, 1871)
106. *Myotis peytoni* Wroughton and Ryley, 1913. Peyton's Whiskered Myotis
*107. *Myotis pilosus* (Peters, 1869). Rickett's Big-footed Myotis
108. *Myotis sicarius* Thomas, 1915. Mandelli's Mouse-eared Myotis
109. *Myotis siligorensis* (Horsfield, 1855). Himalayan Whiskered Myotis
109a. *Myotis siligorensis siligorensis* (Horsfield, 1855)

Subfamily Murinae Miller, 1907

37. Genus :*Harpiocephalus* Gray, 1842

110. *Harpiocephalus harpia* (Temminck, 1840). Lesser Hairy-winged Bat
110a. *Harpiocephalus harpia lasyurus* (Hodgson, 1847)
110b. *Harpiocephalus harpia madrassius* Thomas, 1923
111. *Harpiocephalus mordax* Thomas, 1923. Greater Hairy-winged Bat.

38. Genus :*Murina* Gray, 1842

112. *Murina aurata* Milne-Edwards, 1872. Little Tube-nosed Bat
113. *Murina cyclotis* Dobson, 1872. Round-eared Tube-nosed Bat
113a. *Murina cyclotis cyclotis* Dobson, 1872
114. *Murina huttoni* (Peters, 1872). Hutton's Tube-nosed Bat
114a. *Murina huttoni huttoni* (Peters, 1872)
*115. *Murina jaintiana* Ruedi *et al.*, 2012. Jaintia Tube-nosed Bat
116. *Murina leucogaster* Milne-Edwards, 1872. Greater Tube-nosed Bat
116a. *Murina leucogaster rubex* Thomas, 1916
*117. *Murina pluvialis* Ruedi *et al.*, 2012. Rainforest Tube-nosed Bat
118. *Murina tubinaris* (Scully, 1881). Scully's Tube-nosed Bat

39. Genus :*Harpiola* Thomas, 1915

119. *Harpiola grisea* (Peters, 1872). Peters's Tube-nosed Bat

Subfamily Kerivoulinae Miller, 1907

40. Genus :*Kerivoula* Gray, 1842

- *120. *Kerivoula furva* Kuo *et al.*, 2017. Woolly Bat
*121. *Kerivoula hardwickii* (Horsfield, 1824). Hardwicke's Woolly Bat
*122. *Kerivoula kachinensis* Bates *et al.*, 2004. Kachin Woolly Bat
123. *Kerivoula lenis* Thomas, 1916. Lenis Woolly Bat

124. *Kerivoula picta* (Pallas, 1767). Painted Woolly Bat

124a. *Kerivoula picta picta* (Pallas, 1767)

Family Miniopteridae Miller, 1907

41. Genus :*Miniopterus* Bonaparte, 1837

125. *Miniopterus fuliginosus* (Hodgson, 1835). Eastern Long-fingered Bat

126. *Miniopterus magnater* Sanborn, 1931. Western Long-fingered Bat

127. *Miniopterus pusillus* Dobson, 1876. Small Long-fingered Bat

Notes and Comments

1. ***Cynopterus brachyotis brachyotis* (Müller 1838):** Srinivasulu & Srinivasulu (2012) recognized subspecies from North-East India.
2. ***Cynopterus brachyotis brachysoma* Dobson 1871:** Simmons (2005) recognized as a subspecies from Andaman Island.
3. ***Cynopterus sphinx scherzeri* Zelebor 1869 :** Simmons (2005) recognized as a subspecies from Nicobar Island.
4. ***Megaerops niphanae* Yenbutra and Felten 1983:** Earlier records of *Megaerops ecaudatus* Temminck from North East India, Thailand and Vietnam have been referred to *Megaerops niphanae* (Corbet and Hill 1992). Same view followed by De *et al* (2006).
5. ***Pteropus giganteus leucocephalus* Hodgson 1835:** Srinivasulu & Srinivasulu (2012) recognised the subspecies for the population from Southern Bhutan, Central Nepal, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Uttrakhand and West Bengal.
6. ***Pteropus hypomelanus geminorum* Miller 1903:** Srinivasulu & Srinivasulu (2012) recognized this subspecies from Andaman Islands.
7. ***Pteropus vampyrus* Linnaeus 1758:** Simmons (2005) has not shown its distribution in India (Andaman and Nicobar Islands). However, Corbet and Hill (1992) and Bates and Harrison (1997) have reported vagrant or seasonal migrant populations from these islands. Also mentioned by Singaravelan *et al.* (2009). Hence this species has tentatively been placed in the present list.
8. ***Rousettus aegyptiacus arabicus* Anderson and de Winton 1902:** Prakash (1963) suggested occurrence of this subspecies in Rajasthan due to suitable habitat in the Indian desert. Sinha (1980) did not mention the species from Rajasthan. No collection record from India (Bates and Harrison, 1997). Das (1986) also suggested the exclusion of this species from Indian list eventhough Corbet and Hill (1992) suggested distribution possibly in adjoining parts of NW India. Simmons (2005) follows the same view. Hence present list tentatively includes *Rousettus aegyptiacus arabicus*.
9. ***Rhinolophus ferrumequinum regulus* Andersen 1905:** Sinha (1973), Bates and Harrison (1997) and Csorba *et al.* (2003) synonymised this subspecies under species *Rhinolophus ferrumequinum* and recognized only subspecies *tragatus* and

proximus from Himachal Pradesh to NE India and Kashmir respectively. Srinivasulu and Srinivasulu (2012) followed the same view.

10. ***Rhinolophus siamensis* (Gyldenstilpe 1917)**: Reported from Meghalaya by Ruedi *et al.* (2012b).
11. ***Asellia tridens* (E. Geoffroy 1813)**: Reported from Jaisalmer District, Rajasthan by Senacha and Dookia (2013).
12. ***Hipposideros diadema nicobarensis* (Dobson 1871)**: Ghosh (2008) listed this taxon as a separate species. However following the view of Bates and Harrison (1997), Alfred *et al.* (2002), Simmons (2005) treated it as a subspecies of *Hipposideros diadema*.
13. ***Hipposideros khasiana* Thabah *et al.* 2006**: Proposed new species from Khasi Hills, Meghalaya, North-East India by Thabah *et al.*, 2006 on the basis of a different frequency for echolocation (85 kHz) as compared to its closely related species *Hipposideros larvatus* (Horsfield) with 98 kHz. The specific status of this taxon still needs some clarification. This species has tentatively been placed in the present list.
14. ***Hipposideros nicobarulae* Miller 1902**: Earlier this taxon recognized as subspecies of *Hipposideros ater*. Based on detailed morphometric and cranio-dental studies Douangboubpha *et al.* (2011) raised to species level. Srinivasulu & Srinivasulu (2012) also followed the same.
15. ***Hipposideros speoris* (Schneider 1800)**: Corbet and Hill (1992) recognized two very weakly defined subspecies viz. *Hipposideros speoris speoris* and *Hipposideros speoris pulchellus* on the basis of minor variations in average size. Sinha (1975), Bates and Harrison (1997), Simmons (2005) synonymised *pulchellus* under the species *Hipposideros speoris*. Same view has been followed here.
16. ***Megaderma spasma majus* Andersen 1918**: Srinivasulu & Srinivasulu (2012) recognized North-East population as *M. spasma majus*.
17. ***Tadarida aegyptiaca* (E. Geoffroy 1818)** : Ellerman & Morrison-Scot (1951) have treated *Tadarida tragata* Dobson as a species distinct from *Tadarida aegyptiaca* (E. Geoffroy). Chaturvedi (1964) has shown that *tragata* is conspecific with *aegyptiaca*. Ellerman & Morrison-Scott (1951) have also recognized two subspecies of *Tadarida aegyptiaca* in India, viz. *T. aegyptiaca thomasi* and *T. a. gossei*. However, Sinha (1970) has synonymised *gossei* with *thomasi*. Bates and Harrison (1997) followed the same view of Chaturvedi (1964) and Sinha (1970). According to Das (2003) *tragata* has priority over *gossei* and *thomasi*, so the Indian population should be named as *Tadarida aegyptiaca tragata* (Dobson). But Simmons (2005) listed both *tragatus* and *thomasi* as distinct subspecies.
18. ***Tadarida teniotis* (Rafinesque 1814)**: Agrawal *et al.* (1992) and Das (2003) recognized Indian population as *Tadarida teniotis insignis* (Blyth). Simmons (2005) promoted this taxon to a specific rank and referred all Indian population (West Bengal) as *Tadarida teniotis teniotis* only.
19. ***Eptesicus bottae* (Peters 1869)** : Srinivasulu & Srinivasulu (2012) included in the Indian list from Jammu & Kashmir.

- 20. *Scotomanes ornatus* (Blyth, 1851):** Ellerman & Morrison-Scott (1951) have recognized two subspecies in the non-Chinese range of *Scotomanes ornatus*, viz. *S. o. imbreensis* Thomas, 1921 (Jaintia Hills) and nominate subspecies *S. o. ornatus* (Blyth, 1851) for other areas, including Khasi Hills. Das *et al.* (1995) synonymised *S. o. imbreensis* with *S. o. ornatus*. Sinha (1999) agreed with Das *et al.* (1995) and recognized two subspecies from North-East India i) *S. o. sinensis* Thomas, 1921 from the eastern part of range with specimens slightly smaller and darker in coloration and ii) *S. o. ornatus* having bigger specimens from more westernly locations. Srinivasulu and Srinivasulu (2012) recognized *Scotomanes ornatus ornatus* and *Scotomanes ornatus imbreensis*.
- 21. *Pipistrellus kuhlii* (Kuhl 1817) and *Pipistrellus pipistrellus* (Schreber 1774):** Both the species are not included in the present list following Benda and Gaisler (2015) and Boro *et al.* 2018.
- 22. *Barbastella darjelingensis* (Hodgson 1855):** Earlier listed as subspecies of *Barbastella leucomelas* (Cretzschmar 1826) by Simmons (2005). Benda and Milikovsky (2008) recognized as a distinct species. Same view followed by Srinivasulu & Srinivasulu (2012).
- 23. *Plecotus homochrous* Hodgson 1847:** This taxon was earlier considered as subspecies of *Plecotus auritus* (Linnaeus). Following Spitzenberger *et al.* (2006), Srinivasulu & Srinivasulu (2012) listed as separate species.
- 24. *Plecotus wardi* Thomas 1911:** Earlier considered under *Plecotus austriacus* (Fischer). Following Spitzenberger *et al.* (2006), Srinivasulu & Srinivasulu (2012) listed as separate species.
- 25. *Hypsugo joffrei* (Thomas 1915):** Reported from Meghalaya and Sikkim, North-East India by Saikia *et al.* 2017.
- 26. *Tylonycteris fulvida* (Blyth 1859):** Following Tu *et al.* 2017 all Indian population of *Tylonycteris pachypus* (Temminck 1840) considered here as *T. fulvida*.
- 27. *Tylonycteris malayana* Chasen 1940:** Following Tu *et al.* 2017 all Indian population of *Tylonycteris robustula* Thomas, 1915 considered here as *T. malayana*.
- 28. *Tylonycteris malayana eremtaga* Srinivasulu *et al.* 2018:** New subspecies reported from Andaman Islands by Srinivasulu *et al.* 2018.
- 29. *Myotis altarium* Thomas 1911:** Reported this species from East Khasi Hills and East Jaintia Hills districts of Meghalaya state, northeastern India by Thong *et al.* 2018.
- 30. *Myotis nipalensis* (Dobson 1871):** Earlier listed as subspecies of *Myotis mystacinus* (Kuhl 1819). Treated as distinct species by Benda and Tsytsulina (2000), a view also followed by Srinivasulu & Srinivasulu (2012).
- 31. *Myotis pilosus* (Peters 1869):** Reported from Meghalaya by Thabah 2006 (Pers. Obs.).
- 32. *Murina jaintiana* Ruedi *et al.* 2012:** New species reported from Meghalaya by Ruedi *et al.* 2012a.
- 33. *Murina pluvialis* Ruedi *et al.* 2012:** New species reported from Meghalaya by Ruedi *et al.* 2012a.

34. ***Kerivoula furva* Kuo et al. 2017**: New species also reported from Jaintia Hills, Meghalaya by Kuo et al. 2017.
35. ***Kerivoula hardwickii* (Horsfield 1824)**: Ellerman & Morrison-Scott (1951) recognized three subspecies viz. *K. h. hardwickii* (Horsfield), *K. h. depressa* Miller and *K. h. crypta* Wroughton & Ryley from India. Bates and Harrison (1997) and Das (2003) referred Indian population to *Kerivoula hardwickii depressa* Miller (with *crypta* as synonym). Corbet and Hill (1992) and Sinha (1999) found no significant differences in above all three taxa and synonymised *depressa* and *crypta* with the nominate species *K. hardwickii*. Simmons (2005) also followed the same view. However, Kuo et al. 2017 re-elevated *depressa* as a separate species.
36. ***Kerivoula kachinensis* Bates et al. 2004**: Reported from East Khasi Hills, Meghalaya by Ruedi et al. 2012b.

Acknowledgments

We extend our sincere thanks to Dr. Kailash Chandra, Director, Zoological Survey of India, Kolkata for his continued encouragement and support for our mammalian research. We are also grateful to ZSI ENVIS Team for hosting the checklist.

References

- Agrawal, V. C., Das, P. K., Chakraborty, S., Ghose, R.K., Mandal, A.K. Chakraborty, T.K., Poddar, A.K., Lal. J.P., Bhattacharya, T. P. and Ghosh, M.K. 1992. Mammalia. In : *State Fauna Series 3 : Fauna of West Bengal, Part I* : 27 – 169. (Publ. Zoological Survey of India, Calcutta)
- Alfred, J.R.B., Sinha, N. K. and Chakraborty, S. 2002. *Checklist of Mammals of India, Rec. zool. Surv. India, Occ. Paper No. 199*: 1-289. (Published by the Director, Zool. Surv. India, Kolkata).
- Alfred, J.R.B., Ramakrishna and Pradhan, M. S. 2006. *Validation of Threatened Mammals of India*: 1-568. (Published by the Director, Zool. Surv. India, Kolkata).
- Bates, P. J. J. and Harrison, D. L. 1997. *Bats of the Indian Subcontinent*. Harrison Zoological Museum, Sevenoaks, Kent, U.K., 258pp.
- Benda, P. and Mlikovsky, J. 2008. Nomenclatural notes on the Asian forms of *Barbastella* bats (Chiroptera : Vespertilionidae). *Lynx* (Praha) n.s. 39 (1): 31-46.
- Benda, P. and Tsytsulina, K. A. 2000. Taxonomic revision of *Myotis mystacinus* group (Mammalia : Chiroptera) in the western Palearctic. *Acta Societatis Zoologicae Bohemoslovenicae*, 64 : 331-398.
- Benda, P. and Gaisler, J. 2015. Bats (Mammalia: Chiroptera) of the Eastern Mediterranean and Middle East. Part 12. Bat fauna of Afghanistan: revision of distribution and taxonomy. *Acta Societatis Zoologicae Bohemicae*, 79: 267–458.

- Boro, A.R., Saikia, P.K. and Saikia, U. 2018. New records of bats (Mammalia: Chiroptera) from Assam, northeastern India with a distribution list of bat fauna of the state. *Journal of Threatened Taxa*, 10(5): 11606–11612. <http://doi.org/10.11609/jott.3871.10.5.11606-11612>.
- Brosset, A. 1962a. The bats of Central and Western India. Part I. *J. Bombay nat. Hist. Soc.*, 59 (1): 1-57.
- Brosset, A. 1962b. The bats of Central and Western India. Part II. *J. Bombay nat. Hist. Soc.*, 59 (2): 583 – 624.
- Brosset, A. 1962c. The bats of Central and Western India. Part III. *J. Bombay nat. Hist. Soc.*, 59 (3): 707 – 746.
- Brosset, A. 1963. The bats of Central and Western India. Part IV. *J. Bombay nat. Hist. Soc.*, 60 (2): 337 – 355.
- Chaturvedi, Y. 1964. Taxonomic status of *Tadarida tragata* (Dobson) [Chiroptera : Molossidae]. *J. Bombay nat. Hist. Soc.*, 61: 432-437.
- Corbet, G. B. and Hill, J. E. 1992. *The Mammals of the Indomalayan Region. A systematic Review*. Oxford University Press, Oxford, 488pp.
- Csorba, G., Ujhelyi, P. and Thomas, N. 2003. Horseshoe bats of the World (Chiroptera : Rhinolophidae). *Alana Books*, 160 pp.
- Das, P. K. 1986. Studies on the taxonomy of bats obtained by the Silent Valley (Kerala, India) Expedition, 1980. *Records of the Zoological Survey of India*, 8:259-276.
- Das, P. K. 2003. Studies on some Indian Chiroptera from West Bengal. *Rec. zool. Surv. India, Occ. Paper No. 217*: 164 pp.
- Das, P. K., Ghose, R. K., Chakraborty, T. K., Bhattacharya, T. P. and Ghosh, M. K. 1995. Mammalia. In : *Fauna of Meghalaya, Part I, State Fauna Series 4* : 23 – 128. (Publ. : Director, Zool. Surv. India, Calcutta).
- De, J. K., Mandal, A. K. and Ghosh, M. K. 2006. Mammals, In Fauna of Arunachal Pradesh, *State Fauna Series*, 13 (Part I): 21-68. (Publ.: Director, Zool. Surv. India, Kolkata).
- Douangboubpha, B., Bumrungsri, S., Satasook, C., Soisook, P., Si Si Hla Bu, Aul, B., Harrison, D. L., Pearch, M., Thomas, N. M. and Bates, P. J. J. 2011. A new species of small *Hipposideros* (Chiroptera: Hipposideridae) from Myanmar and a revaluation of the taxon *H. nicobarulae* Miller, 1902 from the Nicobar Islands. *Acta Chiropterol* 13(1): 61-78.
- Ellerman, J.R., and Morrison-Scott, T.C.S. 1951 (1966 2nd ed.). Checklist of Palaearctic and Indian Mammals 1758 to 1956. *Trustees of the British Museum (Natural History), London*, 810pp.

- Ghosh, M. K. 2005. Catalogue of Chiroptera in the collection of the Zoological Survey of India, Part I : Megachiroptera. *Rec. zool. Surv. India, Occ. Paper* No. 232 : 1-143 (Published by the Director, *Zool. Surv. India*, Kolkata).
- Ghosh, M. K. 2008. Catalogue of Chiroptera in the collection of the Zoological Survey of India, Part II : Microchiroptera. *Rec. zool. Surv. India, Occ. Paper* No. 281 : 1-339 (Published by the Director, *Zool. Surv. India*, Kolkata).
- Kock, D. and Bhat, H. R. 1994. *Hipposideros hypophyllus* n. sp. of the *H. bicolor* group from Peninsular India (Mammalia: Chiroptera: Hipposideridae). *Senckenbergiana boil.*, 73 (1-2) : 25-31.
- Kuo, H., Soisook, P., Ho, Y, Csorba, G., Wang, C. and Rossiter, S. 2017. A taxonomic revision of the *Kerivoula hardwickii* complex (Chiroptera:Vespertilionidae) with the description of a new species. *Acta Chiropterologica*, 19(1):19-39.
- Nameer, P. O. 2008. A note on a checklist of Indian Mammals, revised and updated, 2008. *Zoos' Print*, Vol. XXIII (8): 1-12.
- Pradhan, M.S. and Kulkarni, P. P. 1997. Observations on the extended distribution of *Cynopterus brachyotis ceylonensis* Gray in Western India with comments on its status. *Mammalia (Paris)*, 61 (1) : 116-118.
- Pradhan, M. S. 2008. Mammals, In Fauna of Goa State, *State Fauna Series*, 16 :431-496 (Publ.: Director, *Zool. Surv. India*, Kolkata)
- Prakash, I. 1963. Zoogeography and evolution of the mammalian fauna of Rajasthan desert, India. *Mammalia*, 27: 342-351.
- Ramakrishna, Pradhan, M.S. and Sanjay Thakur 2003. *Status Survey of Endangered Species : Wroughton's Free-tailed bat : Otomops wroughtoni* Thomas, 1913. Publ: Director, Zoological Survey of India, Kolkata: 1-16.
- Ruedi, M., Biswas, J. and Csorba, G. 2012a. Bats from the wet: Two new species of tube-nosed bats (Chiroptera:Vespertilionidae) from Meghalaya, India. *Revue Suisse de Zoologie*, 119(1):111-135.
- Ruedi, M., Biswas, J., Chachula, O. and Arbenz, T. 2012b. A winter survey of bats from the Jaintia Hills with a synopsis of their diversity in Meghalaya *In: Arbenz T.(Ed): Cave pearls of Meghalaya. Vol. I Pala Range and Kopili Valley, Abode of Cloud project, Stitzerland*, pp 87-105.
- Saikia, U., Csorba, G. and Ruedi, M. 2017. First records of *Hypsugo joffrei* (Thomas, 1915) and the revision of *Philetor brachypterus* (Temminck, 1840) (Chiroptera: Vespertilionidae) from the Indian Subcontinent. *Revue Suisse de Zoologie*, 124(1):83-89.

- Saikia, U., Thakur, M. L., Bawri, M. and Bhattacharjee, P. C. 2011. An inventory of the Chiropteran Fauna of Himachal Pradesh, northwest India with some ecological observations. *Journal of Threatened Taxa*, 3 (4): 1637–1655.
- Senacha, K. R. and Dookia, S. 2013. Geoffroy's Trident leaf-nosed bat *Aselia tridens* (Geoffroy, E., 1813) from India, *Current Science*, 105(1) : 21-22.
- Simmons, N. B. 2005. Order Chiroptera. Pp. 312-529 in: Mammal species of the World: a taxonomic and geographic reference, Third Edition, Volume 1 (D. E. Wilson and D. M. Reeder, eds.). Johns Hopkins University Press.
- Singaravelan, N. S., Marimuthu, G. and Racey, P. A. 2009. Do fruit bats deserve to be listed as vermin in the Indian Wildlife (Protection) & Amended Acts? A critical review. *Oryx*, 43(4): 608–613.
- Sinha, Y. P. 1970. Taxonomic notes on some Indian bats. *Mammalia*, 34 :81-92.
- Sinha, Y. P. 1973. Taxonomic studies on the Indian Horseshoe bats of the genus *Rhinolophus* Lacepede. *Mammalia*, 37 (4) : 603 – 630.
- Sinha, Y. P. 1975. Notes on the status of the Noseleaf Bat, *Hipposideros speoris pulchellus* Anderson (Mammalia : Chiroptera : Rhinolophidae). *J. Bombay nat. Hist. Soc.*, 72 (2) : 523-524.
- Sinha, Y. P. 1980. The bats of Rajasthan : Taxonomy and zoogeography. *Rec. zool. Surv. India*, 76 : 7-63.
- Sinha, Y. P. 1999. Contribution to the knowledge of Bats (Mammalia : Chiroptera) of North Eastm Hills, India. *Rec. zool. Surv. India, Occ. Paper No. 174* : 1-52.
- Spitzenberger, F., Strelkov P. P., Winkler, H. and Haring, E. 2006. A preliminary revision of the genus *Plecotus* (Chiroptera, Vespertilionidae) based on genetic and morphological results. *Zool. Scr.*, 35 : 187-230.
- Springer, M. S., Teeling, E. C., Madsen, O., Stanhope, M. J. and de Jong, W. W. 2001. Integrated fossil and molecular data reconstruct bat echolocation. *Proceedings of the National Academy of Sciences of the United States of America*, 98: 6241–6246
- Srinivasulu, C. and Srinivasulu, B. 2001. Bats of the Indian subcontinent – An update. *Current Science*, 80 (11): 1378-1380.
- Srinivasulu, C. and Srinivasulu, B. 2006. First record of *Hipposideros ater* Templeton, 1848 from Andhra Pradesh, India with a description of a new subspecies. *Zoos' Print Journal*, 21(5): 2241-2244 (with web supplement 2244ⁱ⁻ⁱⁱ).
- Srinivasulu, C. and Srinivasulu, B. 2012. *South Asian Mammals : Their Diversity, Distribution and Status*, Springer Science+Business Media New York. 467pp.

- Srinivasulu, C., Srinivasulu, A., Srinivasulu, B. and Jones, G. 2018. A new subspecies of the Malayan Bamboo Bat (Chiroptera: Vespertilionidae: *Tylonycteris malayana eremtaga*) from the Andaman Islands, India. *Journal of Threatened Taxa*, 10(1): 11210–11217.
- Teeling, E.C., Madsen, O., Stanhope, M.J., de Jong, W.W., Van Den Bussche, R. and Springer, M.S. 2002. Microbat paraphyly and the convergent evolution of a key innovation in Old World rhinolophoid microbats. *Proceedings of the National Academy of Sciences of the United States of America*, 99:1431–1436.
- Thabah, A. 2006. The diversity of bats in Meghalaya, North east India with emphasis on the species found in Phlang Karu cave in Nongtraï and Tem dibai cave in Sohbar. Unpublished PhD thesis, University of Bristol, UK, 177p.
- Thabah, A., Rossiter, S. J., Kingston, T., Zhang, S., Parsons, S., Mya, K., Zubaid, A. and Jones, G. 2006. Genetic divergence and echolocation call frequency in cryptic species of *Hipposideros larvatus* s.l. (Chiroptera: Hipposideridae) from the Indo-Malayan region. *Biological Journal of the Linnaean Society*, 88:119-130.
- Thong, V.D., Mao, X., Csorba, G., Bates P., Ruedi M., Viet, N.V., Loi, D.N., Nha, P.V., Chachula, O., Tuan, A.T., Son, N.T., Fukui, D., Tu, V.T and Saikia, U. 2018. First records of *Myotis altarium* (Chiroptera:Vespertilionidae) from India and Vietnam. *Mammal Study*, 43(1):67–73.
- Topal, G. 1974. Field observations on Oriental bats. Sex ratio and reproduction. *Vertebr. Hung.* XV : 83-94.
- Tu, V. T., Csorba, G., Ruedi, M., Furey, N. M., Son, N. T., Thong, V. D., Bonillo, C. and Hassanin, A. 2017. Comparative phylogeography of bamboo bats of the genus *Tylonycteris* (Chiroptera, Vespertilionidae) in Southeast Asia. *European Journal of Taxonomy*, 274: 1–38.
- Wilson, D. E. and Reeder, D. M. 2011. Class Mammalia Linnaeus, 1758. In: Zhang, Z.-Q. (Ed.) Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. *Zootaxa*, 3148: 56–60 (23 Dec. 2011) Mangolia Press.